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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,807	10/19/2004	Dirk Jeroen Breebaart	NL021156US	6530

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EXAMINER	
FAULK, DEVONA E	

ART UNIT	PAPER NUMBER
2614	

MAIL DATE	DELIVERY MODE
09/03/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/511,807	BREEBAART ET AL.	
	Examiner	Art Unit	
	DEVONA E. FAULK	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 July 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13,14 and 18-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13,14,18-20,25 and 26* is/are rejected.

7)☒ Claim(s) *21-24,27 and 28* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/8/09 has been entered.

Response to Arguments

2. Applicant's arguments filed 6/8/09 have been fully considered but they are not persuasive.

3. The applicant has cancelled claims 1-12.

4. The applicant has amended claims 13 and 14 and asserts that the prior fails to teach of "and a function of increasing with the dissimilarity of the multi-channel output signal". The examiner asserts that the prior art does not have to read on the newly added claim language. Claims 13 and 14 recite " wherein the measure of similarity is selected from the group consisting of a value of a cross-correlation function at a maximum of said cross-correlation function of the multi-channel output signal and a function of increasing the dissimilarity of the multi-channel output signal". The claim recites selected from, therefore the newly recited claim language is an option and the prior art reads on the first option of " a value of a cross-correlation function at a maximum of said cross-correlation function of the multi-channel output signal".

5. Regarding new claims 18-28, the examiner asserts that the prior art reads on the claim language as recited.

Claim Objections

6. Claims 27 and 28 objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only, and/or, and cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

7. Claims 21-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 13-14,18-20,25-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Baumgarte et al. (US 2003/0035553).

Regarding claim 13, Baumgarte discloses a method of decoding an encoded multi-channel audio signal, the method comprising:

obtaining a monaural signal from the encoded audio signal, the monaural signal comprising a combination of at least two channels (1206 module of the receiver obtains the mono audio signal from the encoded audio signal, Figure 12; ¶ 0084;, Figure 12; page 7, ¶ 0081),

obtaining a set of spatial parameters from the encoded audio signal, the set of spatial parameters including a parameter representing a measure of similarity of waveforms of the at least two audio channels (PCSC decoder 1209, Figure 12, ¶ 0084, ¶ 0074 ; encoder 1201 is implemented based on transmitter 1000 which applies a TF transform to each input channel to convert the signals from the time domain to the frequency domain, frequency is a function of time; ¶0073,0082),

and generating a multi-channel output signal from the monaural signal and the spatial parameters (PCSC decoder 1209 generates a multi-channel output; Figure 12, ¶ 0084), the set of spatial parameters including a parameter representing a measure of similarity of waveforms of the multi-channel output signal, wherein the measure of similarity is selected from the group consisting of a value of a cross-correlation function at a maximum of said cross-correlation function of the multi-channel output signal and a function of increasing with the dissimilarity of the multi-channel output signal (in transmitter 1000 each pair of frequency bands for left and right audio signals are compared to generate one more spatial cues (e.g. an ILD value, an ITD value and/or an HRTF (¶ 074); for each frequency band, a cross-correlation between the converted left and right audio signals is estimated; page 6, , ¶ 0074 that the maximum of the cross-correlation is used).

Regarding claim 14, Baumgarte discloses a decoder for decoding an encoded multi-channel audio signal, the decoder comprising:

means for obtaining a monaural signal from the encoded audio signal, the monaural signal comprising a combination of at least two channels (1206 module of the receiver obtains the monaural signal from the encoded audio signal , Figure 12; ¶ 0084),

means for obtaining a set of spatial parameters from the encoded audio signal , the set of spatial parameters including a parameter representing a measure of similarity of waveforms of the at least two audio channels(PCSC decoder 1209, Figure 12, ¶ 0084, ¶ 0074; encoder 1201 is implemented based on transmitter 1000 which applies a TF transform to each input channel to convert the signals from the time domain to the frequency domain, frequency is a function of time; ¶0073,0082),

and means for generating a multi-channel output signal from the monaural signal and the spatial parameters (PCSC decoder 1209 generates a multi-channel output ; Figure 12, ¶ 0084), the set of spatial parameters including a parameter representing a measure of similarity of waveforms of the multi-channel output signal, wherein the measure of similarity is selected from the group consisting of a value of a cross-correlation function at a maximum of said cross-correlation function of the multi-channel output signal and a function of increasing with the dissimilarity of the multi-channel output signal (in transmitter 1000 each pair of frequency bands for left and right audio signals are compared to generate one more spatial cues (e.g. an ILD value,

an ITD value and/or an HRTF (¶ 074); for each frequency band, a cross-correlation between the converted left and right audio signals is estimated; page 6, , ¶ 0074 that the maximum of the cross-correlation is used).

18. (New) Decoding apparatus for decoding an encoded digital audio signal comprising at least a first and a second digital audio signal component, which have been encoded into a

composite digital signal (X) and a parameter signal (P), the decoding apparatus comprising:

an input unit (210) for receiving a transmission signal (encoder 1201, Figure 12, ¶ 081),

a demultiplexer unit (210) for retrieving the composite digital signal and the parameter signal from the transmission signal (encoder 1201, Figure 12, ¶ 081),

a decorrelator unit (401) for generating from the composite digital signal a decorrelated version of the composite digital signal (auditory scene synthesis 704, Figure 7, ¶ 0067 , ¶ 0074),

a matrixing unit (403) for receiving the composite digital signal and the decorrelated version of the composite digital signal and generating therefrom a replica of the first and second digital audio signal component (auditory scene synthesis 704, Figure 7, ,),

the replica of the first digital audio signal component being a linear combination of the composite digital signal and the decorrelated version of the composite digital signal, using multiplier coefficients that are dependent of the parameter signal (implicit,

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the replica of the second digital audio signal component being a linear combination of the composite digital signal and the decorrelated version of the composite digital signal, using multiplier coefficients that are dependent of the parameter signal (implicit).

Regarding claim 19, Baumgarte discloses that the parameter signal comprises a first parameter signal component (r) which is a measure of the similarity of waveforms of the replicas of the at least first and second digital audio signals, said measure of similarity corresponding to a value of a cross correlation function between the replicas of said at least first and second digital audio signal components, said value being substantially equal to the maximum of said cross correlation function (page 6, ¶ 074; the maximum of the cross-correlation is used).

All elements of claim 20 are comprehended by the rejection of claim 19 (See page 6, ¶ 074 .

Regarding claim 25, Baumgarte discloses that the decorrelator unit is adapted to delay the composite digital signal so as to obtain the decorrelated composite digital signal (¶ 067, ¶ 074)..

All elements of claim 26 are comprehended by the rejection of claim 25.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEVONA E. FAULK whose telephone number is (571)272-7515. The examiner can normally be reached on 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devona E. Faulk/
Primary Examiner, Art Unit 2614